



CJCSI 3170.01A
“Requirements Generation System”
and
CJCSI 6212.01B
“Interoperability And Supportability of
National Security Systems, and
Information Technology Systems ”

The Next Step

Colonel William Febuary, J6I 703-695-8787

Revised DODD 5000.1, DODI 5000.2 and DOD 5000.2R - USD-AT&L

DODD 4630.5 & DODI 4630.8 - OASD-C3I

Requirements

CJCSI 3170 (J8)

- Requirement Generation Process/Procedures
- MNS, CRD, ORD Format
- Interop KPP/IERs

CJCSI 6212 (J6)

- Interop Requirements Cert
- C4ISP Supportability Cert
- Interop System Validation
- Methodology for Interop KPP/IER Development

CJCSI 3312 (J2)

- J2 Intel Supportability Certification

Acquisition

C4I Support Plan (OASD-C3I)

Operational/Systems
/Technical
Architecture
Infrastructure
Support

IERs

Process

MOEs

Testing

TEMP

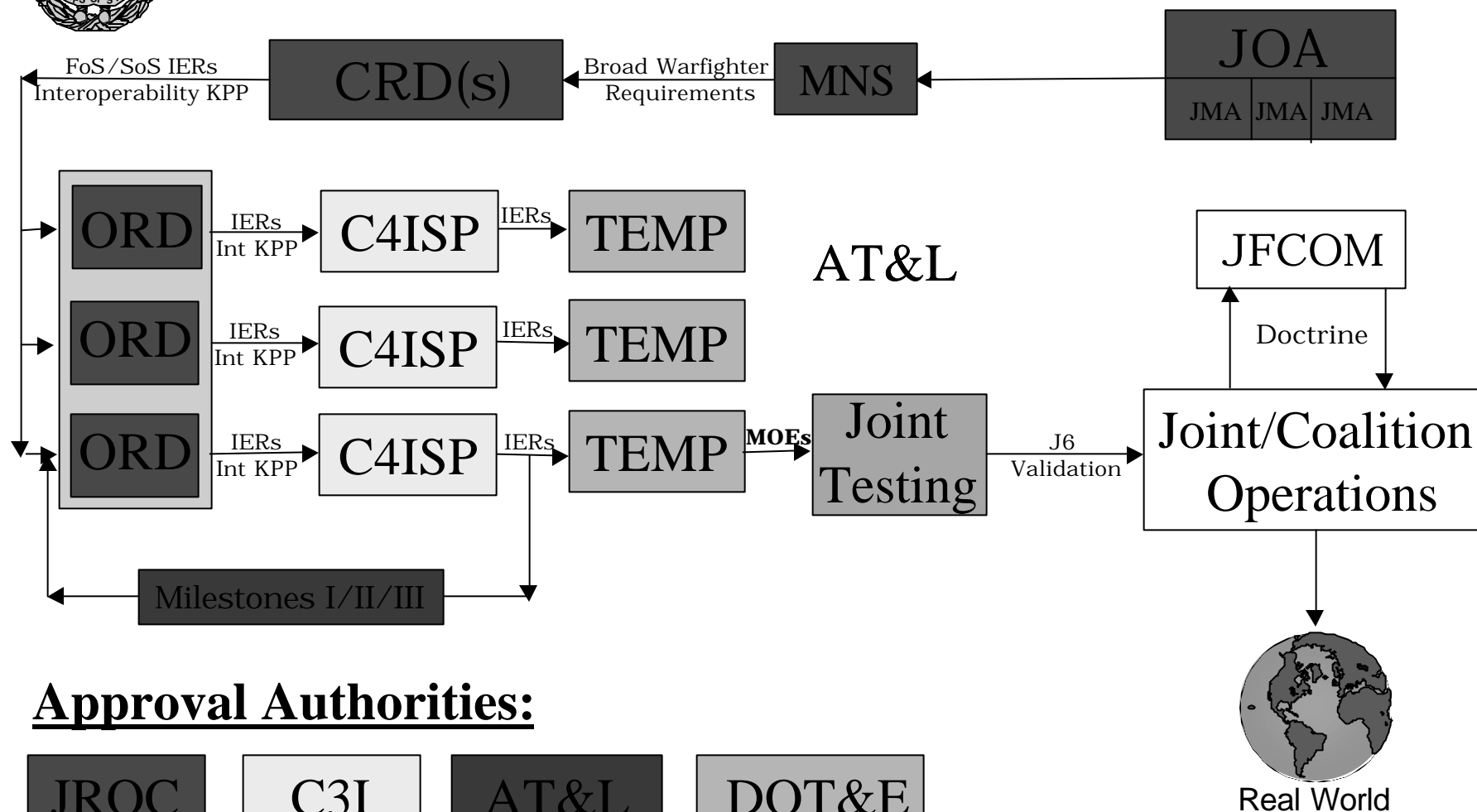
Systems specs accurately reflect requirements and acquisition documents

Service/Agency Testing

- DT/Standards Conformance
- OT&E

DISA(JITC) Interoperability Test Certification

J-6 Interoperability System Validation



Significant Changes in 10 Aug 99

CJCSI 3170.01A



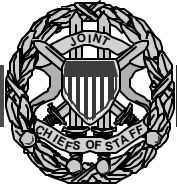
- **Mandated an Interoperability Key Performance Parameter (KPP)**
 - **Interoperability KPP derived from the set of top-level IERs using the procedures from the C4ISR Framework Document.**
- **Link to CJCSI 6212 for J-6 Interoperability Requirements Certification of MNS, CRDs, & ORDs**

ORD Key Performance Parameter (KPP) Attributes



**Those capabilities or characteristics
considered most essential for successful
mission accomplishment.**

- **Is it essential for defining the system?**
- **Is it warfighting oriented?**
- **Is it achievable?**
- **Is it testable?**
- **Can it be explained by analysis?**
- **If not met, am I prepared to cancel the program?**



Significant Changes in CJCSI 6212

- **Aligns CJCSI 6212 with 10 Aug 99 CJCSI 3170**
- **Describes a methodology to develop an Interoperability KPP linked to a set of “top-level” IERs (Enclosure B)**
- **Describes the J-6 Interoperability System Validation process (Enclosure D)**

Methodology to Develop an ORD Interoperability KPP



5 step process based on C4ISR Framework Document

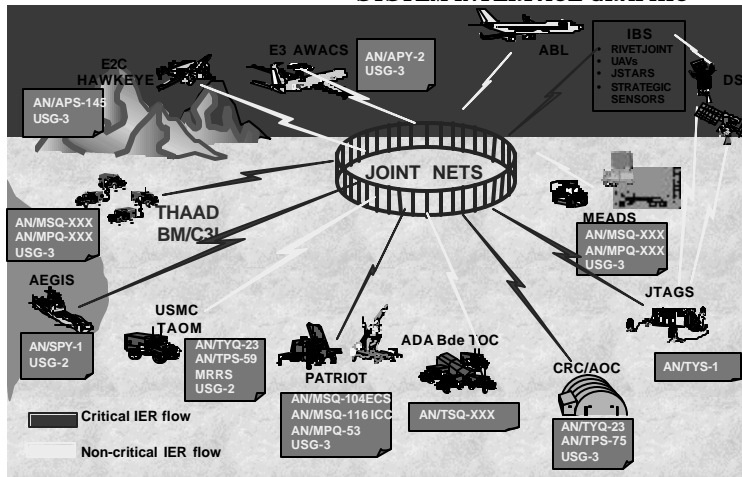
- #1 - ID “top-level” joint and combined external interfaces using High-level Operational Concept Graphic**
- #2 - ID legacy, current, and future external systems that need to be interfaced with using a System Interface Description Graphic**
- #3 - Document “top-level” joint and combined external IERs depicted in step #1 and #2 graphics in matrix format**
- #4 - ID “critical” IERs**
- #5 - Derive Interoperability KPP from IER matrix**

UNCLASSIFIED

CONOPS+Architecture+IERs=Int KPP



Theater High Altitude Area Defense OPERATIONAL CONCEPT VIEW SYSTEM INTERFACE GRAPHIC



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Theater High Altitude Area Defense Top-Level IER Matrix Extract



Event	Info Characterization	Sending Node	Receiving Node	Rationale UJTL#	Critical	Format	Timeliness	Freq	Class	Size	Remarks
TBM Launch & Detection	Targeting	IBS, CRC/AOC, AEGIS, JTAGS, PATRIOT	THAAD	OP 2.2.5 OP 2.4.2.4 OP 2.4.2.2 OP 6.1.6	Y	Data (TADIL J), Voice	<12 Sec	Event Driven	S	132 bits 30 sec	Sent upon launch detection to support attack operations. Both ways. Sent to THAAD initially, from THAAD to support cueing to refine GIP and ELP.
Provide ROE Update	Situational Awareness	CRC/AOC, PATRIOT, MEADS	THAAD	OP 5.3.2 OP 5.4.3	N	Data (USMTF)	<2 Hrs	2/Day	S	<6000 Characters	Sent to provide ROE to LT (BN requirement). Both when THAAD is in Task Force Battalion mode.
Collect Target Information	Situational Awareness	IBS, CRC/AOC, AEGIS, JTAGS, PATRIOT	THAAD	OP 2.2.4	Y	Data (TADIL J)	<12 Sec	Event Driven	S	132 bits	Acquire information that supports detection, identification, and location of enemy targets. Both ways.
Collect Target Information	Situational Awareness	ABL, MEADS	THAAD	OP 2.2.4	N	Data (TADIL J)	<12 Sec	Event Driven	S	132 bits	Acquire information that supports detection, identification, and location of enemy targets with ABL and MEADS when fielded. Both ways.
Attack Operations Targets	Targeting	THAAD	CRC/AOC, IBS	OP 3.2	N	Data (TADIL J)	<12 Sec	Event Driven	S	132 bits	Target identification, target location, target track updates to support both attack ops and active TMD defense.
Synchronize Operational Firepower	Targeting	IBS, CRC/AOC, AEGIS, JTAGS, PATRIOT	THAAD	OP 3.2.7	Y	Data (TADIL J)	<12 Sec	Event Driven	S	132 bits	Enemy targets, friendly forces, neutrals, non-combatants, deconfliction. Line of bearing, ellipse, track ID, track LAT/LONG, track course, track speed, track altitude, confidence. Both ways.

Interoperability KPP

All IERs will be satisfied to the standards specified in the T and O values.

Threshold (T)

100% of IERS designated critical

Objective (O)

100% of IERS

Downstream Process



Certified Interoperability Requirements

ORD

(Interoperability KPP/Architecture/IERs)

C4ISP

Certified Supportability

(Interoperability KPP/Architecture/IERs)

ORD

C4ISP

Int KPP/IERs

**Test
Evaluation
Master
Plan**

MOEs

**System
Testing**

**Test
Results**

**JITC Int Test
Certification**

**Test
Cert Ltr**

**J6 System
Validation**

**USD AT&L & DOT&E Approval
(ACAT I or Special Interest Only)**

**Int KPP/IERs
Architecture**



The Next Step

- **Historically it has been difficult to build to the desired level of interoperability in a new ITS because it had not been clearly articulated in requirements documents.**
- **The architecture and IER based approach mandated by CJCSI 3170/6212 have fundamental changed the interoperability requirements landscape.**
- **Nonetheless the relatively high-level description of information exchanges will require the acquisition and testing community to “peel the onion” to ensure new ITS systems meet the warfighter’s desires.**

Typical Weapon ORD IER Matrix Extract



1-Rationale	2-Event	3-Info Char
OP 6.1.5 (Conduct Missile Defense)	Upon New Detection	Track Data
4-Sending Node	5-Rec Node	6-Critical
Non-Organic Sensor	ORD Weapon	Y
7-Format	8-Timeliness	9-Classification
Data	Less than 0.5 s	SECRET

This IER describes the Warfighter's requirement to get track data from a sensor to a proposed weapon system. But what does he really need?



The Next Step IER Example

- **What is a new detection?**
 - New Track regardless of ID?
- **What is track data?**
 - Latitude and longitude?
 - Bearing and range from firing platform?
 - Course, Speed, Altitude?
 - ID?
- **What is data?**
 - What format will be used?
 - Will data compression be needed to meet the timeliness requirements?
- **Bottom line is that the warfighter will still need the technical community to do what it does best: Build to the needs of the warfighter.**

?S



ORD and C4ISP Relationship

ORD

Warfighter Requirements

Top-Level Architecture

Top-Level IERs

IERs (9+ Fields)

JTA Compliance

C4ISP

**Engineering Solutions
to Warfighter Needs**

**Inter and Intra Service
Architecture**

**All Inter and Intra
Service IERs**

IERs (20+ Fields)

**Define Specific JTA
Standards Used**